

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) A method for detecting the differentiation status of mammalian embryonic stem cells comprising detecting the cell surface expression of 5T4 antigen in said stem cells, wherein 5T4 expression indicates stem cells that are undergoing differentiation.
2. (Previously presented) A method as claimed in claim 1 wherein the absence of 5T4 antigen expression indicates undifferentiated stem cells.
3. (Canceled)
4. (Currently amended) A method as claimed in claim [[3]] 1 wherein said stem cells are embryonic stem cells embryonic germ cells or embryonal carcinoma cells.
5. (Currently amended) A method as claimed in claim [[2]] 1 wherein said stem cells are murine, human, primate, porcine, feline, bovine, ovine or canine.
6. (Currently amended) A method of claim [[2]] 1 wherein said 5T4 expression is detected by anti-5T4 antibodies.
7. (Canceled)
8. (Currently amended) A method of detecting differentiation status of a population of mammalian embryonic stem cells comprising the steps of:
  - a) taking a sample of cells from said population of mammalian embryonic stem cells;
  - b) incubating said sample with a labelled anti-5T4 antibody such that specific binding of anti-5T4 antibody to 5T4 antigen occurs; and

c) detecting said binding of said antibody wherein binding of the anti-5T4 antibody to cells in the sample is indicative of the presence of 5T4 and differentiated stem cells undergoing differentiation.

9. (Currently amended) A method for separating a population of undifferentiated or differentiated mammalian embryonic stem cells or mammalian embryonic stem cells undergoing differentiation from a mixture of differentiated and undifferentiated mammalian embryonic stem cells and mammalian embryonic stem cells undergoing differentiation comprising:

- a) binding cells, in [[a]] the mixture of differentiated and undifferentiated stem cells, with anti-5T4 antibody, wherein 5T4 expression indicates stem cells that are undergoing differentiation;
- b) separating cells with bound antibody from cells with no bound antibody;
- and
- c) isolating either the bound or unbound cells.

10. (Previously presented) A method as claimed in claim 9 wherein said isolated cells are viable.

11-20. (Canceled)